AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions of claims in the application:

LISTING OF CLAIMS:

1. (CURRENTLY AMENDED) A method for making a spin valve comprising:
providing a substrate;
depositing a first ferromagnetic layer having a first surface on the substrate;
depositing a spacer layer having a second surface;
depositing a second ferromagnetic layer, wherein the spacer layer is disposed between the first and second ferromagnetic layers; and
exposing at least the first surface to an oxygen partial pressure for causing oxygen to become physisorbed onto at least the first surface for forming an oxygen treated surface having a reduced surface roughness, then decreasing the oxygen partial pressure before depositing a subsequent layer onto the oxygen treated surface having reduced surface roughness.

2. (CURRENTLY AMENDED) A method for making a spin valve comprising:
providing a substrate;
depositing a first ferromagnetic layer having a first surface on the substrate;
depositing a spacer layer having a second surface;
depositing a second ferromagnetic layer, wherein the spacer layer is disposed between the first and second ferromagnetic layers; and
exposing one or more of the first and second surfaces to an oxygen partial pressure for causing oxygen to become physisorbed onto at least one of the first and second surfaces for forming at least one of a first oxygen treated surface having a reduced surface roughness and a second oxygen treated surface having a reduced surface roughness, then decreasing the oxygen partial pressure before depositing a subsequent layer onto the at

least one of the first and second oxygen treated surfaces having reduced surface roughness,

wherein one or more of the first and second surfaces are exposed to an oxygen partial pressure of between about $1x10^{-7}$ Torr and about $5x10^{-5}$ Torr.

3. (ORIGINAL) The method of claim 2, wherein the oxygen partial pressure decreases below an oxygen partial pressure level used in exposing the first and second surfaces before the depositions of the spacer layer and the second ferromagnetic layer.

4. (ORIGINAL) The method of claim 3, wherein the first surface is exposed to the oxygen partial pressure before depositing the spacer layer.

5. (ORIGINAL) The method of claim 3, wherein the second surface is exposed to the oxygen partial pressure before depositing the second ferromagnetic layer.

6. (ORIGINAL) The method of claim 1, wherein an ion beam sputtering process is used for depositions of the first ferromagnetic, second ferromagnetic and spacer layers.

7. (CURRENTLY AMENDED) The method of claim 1, wherein oxygen molecules are directed toward the substrate, and a substrate shutter is fully open for the first and second surfaces to be directly exposed to the oxygen, wherein no additional metal is deposited until the oxygen partial pressure is decreased.

8. (PREVIOUSLY PRESENTED) The method of claim 1, wherein the oxygen partial pressure is decreased by stopping a flow of oxygen.

9. (CURRENTLY AMENDED) A method for making a spin valve comprising:

providing a substrate;

depositing a first ferromagnetic layer having a first surface on the substrate;

exposing the first surface to an oxygen partial pressure for causing oxygen to become physisorbed onto the first surface for forming a first oxygen treated surface having a reduced surface roughness relative to the first surface prior to exposure to the oxygen, then decreasing the oxygen partial pressure before depositing a subsequent layer onto the first oxygen treated surface having reduced surface roughness;

depositing a spacer layer above the first surface, the spacer layer having a second surface;

exposing the second surface to an oxygen partial pressure for causing oxygen to become physisorbed onto the second surface for forming a second oxygen treated surface having a reduced surface roughness relative to the second surface prior to exposure to the oxygen, then decreasing the oxygen partial pressure before depositing a subsequent layer onto the second oxygen treated surface having reduced surface roughness; and

depositing a second ferromagnetic layer above the second surface, wherein the spacer layer is disposed between the first and second ferromagnetic layers.

10. (PREVIOUSLY PRESENTED) The method of claim 1, wherein the oxygen partial pressure decreases below an oxygen partial pressure level used in exposing the first and second surfaces before the depositions of the spacer layer and the second ferromagnetic layer.

11. (PREVIOUSLY PRESENTED) The method of claim 2, wherein an ion beam sputtering process is used for depositions of the first ferromagnetic, second ferromagnetic and spacer layers.

12. (CURRENTLY AMENDED) The method of claim 2, wherein oxygen molecules are directed toward the substrate, and a substrate shutter is fully open for the

first and second surfaces to be directly exposed to the oxygen, wherein no additional metal is deposited until the oxygen partial pressure is decreased.

13. (CURRENTLY AMENDED) The method of claim 1, wherein the ~~spacer~~ subsequent layer is deposited prior to significant oxidation of the first ferromagnetic layer.

14. (CURRENTLY AMENDED) The method of claim 2, wherein the ~~spacer~~ subsequent layer is deposited prior to significant oxidation of the first ferromagnetic layer.

15. (PREVIOUSLY PRESENTED) The method of claim 9, wherein the spacer layer is deposited prior to significant oxidation of the first ferromagnetic layer, wherein the second ferromagnetic layer is deposited prior to significant oxidation of the spacer layer.